SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Preliminary Draft Staff Report

Proposed Amended Rules
212 – Standards for Approving Permits and Issuing Public Notice
1401 – New Source Review of Toxic Air Contaminants
1401.1 – Requirements for New and Relocated Facilities Near Schools, and
1402 – Control of Toxic Air Contaminants from Existing Sources

March 2015 (Revised March 21, 2015)

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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EXECUTIVE SUMMARY

BACKGROUND

The California Office of Environmental Health Hazard Assessment (OEHHA) establishes risk exposure information (i.e., risk values) for toxic air contaminants (TACs). Additionally, AB2588 requires that OEHHA develop health risk assessment guidelines for implementation of the Hot Spots Program (Health and Safety Code Section 44360(b)(2)). In 2003, OEHHA developed and approved the Health Risk Assessment Guidance (2003 OEHHA Guidelines). Since the adoption of the 2003 guidelines, new scientific information has shown that early-life exposures to air toxics contribute to an increased lifetime risk of developing cancer and other adverse health effects, compared to exposures that occur in adulthood. Based on this information, OEHHA approved the Air Toxics Hot Spots Program Guidance Manual for Preparation of Risk Assessments (Revised OEHHA Guidelines) on March 6, 2015. The Revised OEHHA Guidelines incorporate age sensitivity factors which will increase cancer risk estimates to residential and sensitive receptors by approximately 3 times, and more than 3 times in some cases depending on whether the toxic air contaminant has multiple pathways of exposure in addition to inhalation. Under the Revised OEHHA Guidelines, even though the toxic emissions from a facility have not increased, estimated cancer risk to a residential receptor will increase. Cancer risks for off-site worker receptors are similar between the existing and revised methodology because the methodology for adulthood exposures remains relatively unchanged.

PROPOSED AMENDMENTS TO RULES 1401, 1401.1, 1402, AND 212

The SCAQMD relies on OEHHA's health risk assessment guidelines in various aspects of its toxics regulatory program including the permitting program, AB2588 Hot Spots Program, and existing regulatory program. Amendments to the following rules are being proposed to reference the Revised OEHHA Guidelines for estimation of health risks:

- Rule 1401 – New Source Review of Toxic Air Contaminants
- Rule 1401.1 – Requirements for New and Relocated Facilities Near Schools
- Rule 1402 – Control of Toxic Air Contaminants from Existing Sources
- Rule 212 – Standards for Approving Permits and Issuing Public Notice

The proposed amended rules will revise definitions and risk assessment procedures to be consistent with the Revised OEHHA Guidelines. Proposed amendments are to ensure SCAQMD staff can implement the Revised OEHHA Guidelines regarding how health risks are calculated. Staff is not recommending revisions to the health risk thresholds in Rules 1401, 1401.1 or 1402. Staff is preparing Risk Assessment Procedures for Rules 1401, 1401.1, and 212, Version 8.0 and Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588). Both documents will incorporate the Revised OEHHA Guidelines and will be used to implement Rules 1401, 1401.1, 1402, and 212.

The California Air Resources Board (CARB) and the California Air Pollution Control Officers Association's (CAPCOA) are finalizing Risk Management Guidelines for Permitting and AB2588 to be consistent with the Revised OEHHA Guidelines that are expected to recommend the using the 95th percentile breathing rate for children under two years of age to the last trimester of pregnancy and the 80th percentile breathing rate for all other ages. CARB and CAPCOAs Risk Management Guidelines are expected to be considered by the CARB Board in May 2015. The SCAQMD's Risk Assessment Procedures for Rules 1401, 1401.1, and 212 and the Supplemental

Guidelines for Preparing Risk Assessments for AB2588 will also incorporate these modified breathing rates.

PUBLIC PROCESS AND OUTREACH EFFORTS

Development of PAR 212, 1401, 1401.1, and 1402 is being conducted through a public process. As part of the generalized work plan presented at the March 2015 Governing Board meeting, SCAQMD staff has begun an extensive outreach and communication effort to immediately engage all stakeholders regarding the Revised OEHHA Guidelines, including amendments to Rules 212, 1401, 1401.1, and 1402. SCAQMD staff has been meeting with industry groups to discuss the Revised OEHHA Guidelines. As part of the outreach efforts, staff will host five regional Public Workshops in March and April of 2015 throughout the Basin. The five public workshops are as follows:

- **March 31, 2015 at 10:00 a.m.**
  Norton Regional Events Center
  Auditorium
  1601 E. 3rd Street, San Bernardino, CA 92408
- **March 31, 2015 at 2:00 p.m.**
  Louis Robidoux Public Library
  Community Room
  5840 Mission Boulevard, Riverside, CA 92509
- **April 1, 2015 at 10:00 a.m.**
  SCAQMD Auditorium
  21865 Copley Drive, Diamond Bar, CA 91765
- **April 2, 2015 at 10:00 a.m.**
  Buena Park Community Center Ballroom
  6688 Beach Boulevard, Buena Park, CA 90621
- **April 2, 2015 at 4:00 p.m.**
  Wilmington Senior Citizen Center
  Community Room
  1371 Eubank Avenue, Wilmington, CA 90744

All responses to comments received at the Public Workshops will be included in an Appendix to the Final Staff Report.

CALIFORNIA ENVIRONMENTAL QUALITY ACT ANALYSIS

Pursuant to the California Environmental Quality Act (CEQA) and SCAQMD Rule 110, SCAQMD staff has evaluated the proposed project and made the appropriate CEQA determination. The public workshop meetings will also serve as a CEQA scoping meeting to solicit public input on any potential environmental impacts from the proposed project. Comments received at the public workshops on any environmental impacts will be considered when developing the final CEQA document for this rulemaking.

CHAPTER 1: BACKGROUND

INTRODUCTION

On March 6, 2015, the California Office of Environmental Health Hazard Assessment (OEHHA) approved revisions to their Risk Assessment Guidelines (Revised OEHHA Guidelines). The Revised OEHHA Guidelines were triggered by the passage of the Children's Health Protection Act of 1999 (SB 25, Escutia) requiring OEHHA to ensure infants and children are explicitly addressed in assessing risk. Over the past decade, advances in science have shown that early-life exposures to air toxics contribute to an increased lifetime risk of developing cancer, or other adverse health effects, compared to exposures that occur in adulthood. The new risk assessment methodology addresses this greater sensitivity and incorporates the most recent data on infants and childhood and adult exposure to air toxics. The Revised OEHHA Guidelines incorporate age sensitivity factors and other changes which will increase cancer risk estimates to residential and sensitive receptors by approximately 3 times, and more than 3 times in some cases depending on whether the toxic air contaminant has multiple pathways of exposure in addition to inhalation. Health risks for off-site worker receptors are similar between the existing and revised methodology because the methodology for adulthood exposures remains relatively unchanged. Even though there may be no increase in toxic emissions at a facility, the estimated cancer risk using the Revised OEHHA Guidelines is expected to increase.

SCAQMD'S AIR TOXICS REGULATORY PROGRAM

The SCAQMD has a robust and comprehensive air toxics regulatory program that consists of rules to address new and modified toxic sources, AB2588 facilities (existing toxic sources), and source-specific toxic rules. Rules 1401, 1401.1, an 1402 are referred to as the "umbrella" rules that specify requires for all new and modified permitted sources (Rules 1401 and 1401.1 for sources near schools) and requirements for the existing sources under the Air Toxics Hot Spots program (Rule 1402). In addition to these umbrella toxics rules, the SCAQMD's regulatory program includes over fifteen source-specific toxic rules regulating specific equipment or industry categories such as chrome plating, asbestos remediation, lead emission reductions, percholoroethylene dry cleaners, diesel internal combustion engines, and others. Implementation of these programs has resulted in significant reductions in toxic emissions. Since the development of SCAQMD's Air Toxics Program in 1990, non-diesel cancer risks have been reduced between 75 to 87 percent, depending on the location within the Basin.

PROPOSED AMENDMENTS TO RULES 1401, 1401.1, 1402, AND 212

The SCAQMD relies on OEHHA's health risk assessment guidelines in various aspects of its toxics regulatory program including the permitting program, AB2588 Hot Spots Program, and existing regulatory program. Amendments to the following rules are being proposed to reference the Revised OEHHA Guidelines for estimation health risks:

- Rule 1401 – New Source Review of Toxic Air Contaminants;
- Rule 1401.1 – Requirements for New and Relocated Facilities Near Schools;
- Rule 1402 – Control of Toxic Air Contaminants from Existing Sources; and
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The proposed amended rules will revise definitions and risk assessment procedures to be consistent with the Revised OEHHA Guidelines. Proposed amendments are to ensure SCAQMD staff can implement the Revised OEHHA Guidelines regarding how health risks are calculated,

and staff is not recommending revisions to the health risk thresholds in Rules 1401, 1401.1 or 1402. The SCAQMD staff is preparing Risk Assessment Procedures for Rules 1401, 1401.1, and 212, Version 8.0 and the 2015 Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588). Both documents will incorporate the Revised OEHHA Guidelines and will be used to implement Rules 1401, 1401.1, 1402, and 212.

The California Air Resources Board (CARB) and the California Air Pollution Control Officers Association's (CAPCOA) are finalizing Risk Management Guidelines for Permitting and AB2588 to be consistent with the Revised OEHHA Guidelines that are expected to maintain the breathing rate using the 95th percentile breathing rate for children under two years of age and the 80th percentile breathing rate for all other ages. CARB and CAPCOAs Risk Management Guidelines are expected to be approved in May 2015. The SCAQMD's Risk Assessment Procedures for Rules 1401, 1401.1, and 212 and the Supplemental Guidelines for Preparing Risk Assessments for AB2588 will also incorporate these modified breathing rates. These modified breathing rates are consistent with CARB's 2003 Interim Risk Management Policy for Residential-Based Cancer Risk that was applied for Health Risk Assessments (HRAs) prepared using OEHHA's 2003 version of its HRA Guidance Manual. This policy recommended that HRAs utilize an 80th percentile breathing rate for inhalation residential cancer risks instead of the 95th percentile recommended in OEHHA's 2003 HRA Guidance Manual. This approach has been used in risk assessments state-wide since that time.

PUBLIC PROCESS AND OUTREACH EFFORTS

At the Governing Board Meeting on May 16, 2014, SCAQMD staff presented *Potential Impacts of the New OEHHA Risk Guidelines on SCAQMD Programs*. The presentation explained that several SCAQMD toxic rules that establish permitting requirements and implement the SCAQMD's Toxics Hot Spots Program, reference the OEHHA's health risk assessment guidelines and that the Revised OEHHA Guidelines would affect these programs. In addition, at the March 6, 2015 Governing Board Meeting, SCAQMD staff presented a Work Plan for implementing the OEHHA's Revised Air Toxics Hot Spots Program Risk Assessment Guidelines. The Work Plan included the following recommendations:

- Implement enhanced outreach and risk communication activities;
- Proceed with development of adjustments to SCAQMD's various programs related to Risk Assessment (Proposed Amended Rules 1401, 1401.1, 1402, and 212); and
- Provide updates to the Stationary Source Committee during rule development process.

Development of PAR 1401, 1401.1, 1402, and 212 is being conducted through a public process. As part of the generalized work plan presented at the March 2015 Governing Board meeting, SCAQMD staff has begun an extensive outreach and communication effort to immediately engage all stakeholders regarding the Revised OEHHA Guidelines, including amendments to Rules 212, 1401, 1401.1, and 1402. SCAQMD staff has been meeting with industry groups to discuss the Revised OEHHA Guidelines. As part of the outreach efforts, staff will host five regional Public Workshops in March and April of 2015 throughout the Basin. The five public workshops are as follows:

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All responses to comments received at the Public Workshops will be included in an Appendix to the Final Staff Report.

OEHHA

OEHHA is a state agency under the California Environmental Protection Agency that establishes risk exposure information (i.e., risk values) for toxic air contaminants and is responsible for developing health risk assessment guidance for the state of California. The Scientific Review Panel (SRP) reviews and approves the methodologies used to develop these risk values, thereby finalizing the values for use by state and local agencies in assessing health risks related with exposure to toxic air contaminants. In addition, AB2588 requires that OEHHA develop health risk assessment guidelines for implementation of the Hot Spots Program (Health and Safety Code Section 44360(b)(2)). In 2003, OEHHA developed and approved the Health Risk Assessment Guidance document (2003 OEHHA Guidelines) supported by Technical Support documents (TSDs) reviewed and approved by OEHHA and the SRP. Since 2003, OEHHA and the SRP developed and approved three additional TSDs: TSD for the Derivation of Noncancer Reference Exposure Levels (2008), TSD for Cancer Potency Factors (2009), and TSD for Exposure Assessment and Stochastic Analysis (2012). The three TSDs provide new scientific information showing that early-life exposures to air toxics contribute to an increased lifetime risk of developing cancer and other adverse health effects, compared to exposures that occur in adulthood. As a result, OEHHA developed and adopted the Revised OEHHA Guidelines on March 6, 2015 which incorporates the new scientific information.

TOXIC AIR CONTAMINANTS

A substance is considered toxic if it has the potential to cause adverse health effects in humans. A toxic substance released to the air is considered a toxic air contaminant (TAC) or "air toxic". TACs are identified by state and federal agencies based on a review of available scientific evidence. Federal agencies also use the term hazardous air pollutant.

Exposure to TACs can potentially increase the risk of contracting cancer or result in other adverse health effects. Compounds with cancer risk values (carcinogens) may cause an increase

in the probability that an exposed individual would develop cancer. Compounds with non-cancer risk values (chronic and acute) may cause other health effects including nausea or difficulty breathing and may contribute to immunological, neurological, reproductive, developmental, and respiratory problems. Rules 1401, 1401.1, and 1402 are designed to help protect the public from the health risks posed by TACs that are emitted by stationary sources. A health risk assessment is used to estimate the increased probability that an individual would contract cancer or experience other adverse health effects as a result of exposure to listed TACs. TACs are regulated by the SCAQMD based on risk values identified pursuant to the recommendations by OEHHA.

HEALTH RISK ASSESSMENT

A health risk assessment is used to estimate the likelihood that an individual would contract cancer or experience adverse health effects as a result of exposure to TACs. Risk assessment is a methodology for estimating the probability or likelihood that an adverse health effect will occur. OEHHA is the state agency with primary responsibility for developing and recommending risk assessment methods.

Risk assessment consists of four components:

- **Hazard identification**: The evaluation of compounds to determine whether they may cause adverse health effects;
- **Dose-response assessment**: The estimation of the biological response to a given exposure to a compound;
- **Exposure assessment**: The estimation of the level of exposure to a compound; and
- **Risk characterization**: The estimation of the health risk to individuals based on the estimate of exposure and the dose-response relationship.

Hazard identification and dose-response assessments are the responsibility of other regulatory agencies, such as OEHHA. Health risk assessments for particular facilities are conducted by integrating this information with a site-specific exposure assessment to develop an estimate of health risk from the facility's emissions. The latter two elements are conducted or reviewed by the air permitting agencies. To determine the potential health risk, factors such as the emission rate of the TAC, facility location, type of receptor (resident/worker), receptor distance, and meteorology in the area are used. Rule 1401 relies on OEHHA guidelines for calculating toxic risks. These guidelines are incorporated in the SCAQMD's Risk Assessment Procedures for Rule 1401 and 212.

SCAQMD RISK ASSESSMENT PROCEDURES

The SCAQMD staff is preparing revisions to its risk assessment procedures used for permitting and the AB2588 Hot Spots program. Both risk assessment procedures have been based on OEHHA's risk assessment procedures. Revisions to Risk Assessment Procedures for Rules 1401, 1401.1, and 212, Version 8.0 and the 2015 Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588) are being developed to incorporate the Revised OEHHA Guidelines as well as incorporate CARB's proposed modified breathing rates. Both documents will incorporate the Revised OEHHA Guidelines and will be used to implement Rules 1401, 1401.1, 1402, and 212.

SCAQMD Risk Assessment Procedures for Rules 1401 and 212

The SCAQMD Risk Assessment Procedures for Rules 1401 and 212, Version 7.0 (July 1, 2005) are used by SCAQMD permitting staff and the regulated community to estimate toxic risk from new, relocated, and modified permitted sources. The SCAQMD's Risk Assessment Procedures incorporate OEHHA's previous guidance for determining health risks. The SCAQMD's Risk Assessment Procedures provide four levels of screening risks: Tiers 1, 2, 3, and 4. The tiers are progressively more complex, require increasingly more site-specific details, and give increasingly more refined estimates of risk. Tier 1 uses a table of emission levels for screening based on worst-case assumptions and back-calculating to 1 in one million cancer risk or a hazard index of 1.0, whichever is more stringent. The user determines the emission level for the source and compares it to the table. If it is less than the screening level, no further analysis is needed and no control is required for toxics. Tier 2 provides a formula and the used inputs basic site-specific information to calculate risks. If the source does not pass Tier 2, then dispersion modeling (Tier 3 or Tier 4) can be used to do a more accurate site-specific risk analysis.

The current SCAQMD Risk Assessment Procedures are based on the 2003 OEHHA Guidelines. As a result, the SCAQMD staff is working to update these procedures to incorporate the Revised OEHHA Guidance and CARB's proposed modified breathing rates in Risk Assessment Procedures for Rules 1401, 1401.1, and 212, Version 8.0. In addition to refining Tier screening tables for consistency with the Revised OEHHA Guidelines, additional tables may be added for specific parameters for select source categories and equipment, including adding modified breathing rates consistent with the California Air Resources Board (CARB) and the California Air Pollution Control Officers Association's (CAPCOA) Risk Management Guidelines for Permitting and AB2588 to the Risk Assessment Procedures, to ensure consistency with the Revised OEHHA Guidelines. This document is expected to be approved in May 2015.

Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots"

Information and Assessment Act District staff is updating its Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588 Supplemental Guidelines) to be consistent with the updated OEHHA Guidelines. Revisions to the AB2588 Supplemental Guidelines include updated SCAQMD-specific guidance on default parameters to use in HARP2 software, default exposure parameters (e.g., breathing rates, exposure durations, etc.), and guidance for dispersion modeling conducted with AERMOD. The AB2588 Supplemental Guidelines will also incorporate the adjusted breathing rates provided in ARB's updated Risk Management Guidance.

Exposure Assessment

The estimated probability of contracting cancer due to exposure to a carcinogen is a function of the dose received, which is based on the airborne concentration of the toxic air contaminant in the vicinity of the source. This is usually estimated through air dispersion modeling. For some TACs, additional receptor exposure can occur due to deposition from the air onto surfaces such as skin, soil, or vegetation, which can then be ingested or otherwise absorbed by the exposed population. These exposures are also quantified. Since exposures to individuals will vary with distance from the source and other factors (such as meteorological or geographical conditions),

exposure estimates are calculated for the most exposed individual. Based on the Revised OEHHA Guidelines, this estimate assumes that the potential maximally exposed individual will be exposed continuously for a 30-year lifetime if exposure occurs in a residential area. It should be noted that this is change from the 2003 OEHHA Guidelines assumption of a 70-year lifetime exposure. At commercial and industrial locations, under the Revised OEHHA Guidelines, the exposure duration is a 25 years. The 2003 OEHHA Guidelines assumed a worker exposure of 40 years.

Cancer Risk Characterization

Exposure to TACs can potentially increase the risk of contracting cancer or result in other adverse health effects. Compounds with cancer risk values (carcinogens) may cause an increase in the probability that an exposed individual would develop cancer. Compounds with non-cancer risk values (chronic and acute) may cause other health effects including nausea or difficulty breathing and may contribute to immunological, neurological, reproductive, developmental, and respiratory problems. Rule 1401 is designed to help protect the public from the health risks posed by TACs that are emitted by stationary sources.

Risks from carcinogens are expressed as an added lifetime probability of contracting cancer as a result of a given exposure. For example, if the emissions from a facility are estimated to produce a risk of 1 in one million to the most exposed individual, this means that the individual's chance of contracting cancer has been increased by one chance in one million over and above his or her chance of contracting cancer from all other factors (for example, diet, smoking, heredity and other factors). This added risk to a maximally exposed individual is referred to as a "maximum individual cancer risk" or MICR. In Rule 1401, the risk to the exposed population is also characterized as an estimate of the number of excess cancer cases which may occur in the population as a result of exposure, or "cancer burden." For example, if one million people were subjected to an increased risk of one in one million due to a given exposure, it would be estimated that over a lifetime, one excess cancer case may result in this population from this exposure.

SUMMARY OF SCAQMD RULES 1401, 1401.1, 1402, AND 212

RULE 1401

Rule 1401 – New Source Review for Toxic Air Contaminants was adopted by the SCAQMD Governing Board in June 1990. The rule establishes cancer and non-cancer health risk requirements for new, relocated, or modified permitted sources of toxic air pollutants. Under Rule 1401, new and modified permitted sources cannot exceed an MICR of 1 in one million, if the source is not equipped with best available control technology for toxics (T-BACT). If T-BACT is installed, the MICR cannot exceed 10 in one million. The MICR is the estimated probability of a potential maximally exposed individual contracting cancer as a result of exposure to toxic air contaminants. Rule 1401 also has requirements for cancer burden which represents the estimated increase in the occurrence of cancer cases in a given population due to exposure to TACs as well as non-cancer chronic and acute hazard thresholds. Rule 1401 has been amended several times to add or modify new compounds or risk values to the list of TACs as they are identified and risk values are finalized or amended by the state.

RULE 1401.1

Rule 1401.1 – Requirements for New and Relocated Facilities Near Schools was adopted by the SCAQMD Governing Board in November 2005. The rule is designed to be more health protective for school children by establishing more stringent risk requirements related to facility-wide cancer risk and non-cancer acute and chronic HI for new and relocated facilities emitting toxic air contaminants located near schools, thereby reducing the exposure of toxic emissions to school children. For new facilities, the rule requires the facility-wide cancer risk to be less than 1 in one million at any school or school under construction within 500 feet of the facility. If there are no schools within 500 feet, the same risk levels must be met at any school or school under construction within 500 to 1,000 feet unless there is a residential or sensitive receptor within 150 feet of the facility. For relocated facilities, if a facility is relocating, the facility must demonstrate, for each school or school under construction within 500 feet of the facility, that either: 1) the risk at the school from the facility in its new location is no greater than the risk at that same school when the facility was a its previous location, or 2) the facility-wide cancer risk at the school does not exceed 1 in one million. Unlike other SCAQMD risk-based rules, the required risk thresholds of Rule 1401.1 do not change based on whether or not the source is equipped with T-BACT.

RULE 1402

Rule 1402 – Control of Toxic Air Contaminants from Existing Sources was adopted in April 1994. Rule 1402 establishes facility-wide risk requirements for existing facilities that emit TACs and implements the state AB2588 Air Toxics "Hot Spots" program. It contains requirements for toxic emissions inventories, health risk assessments, public notification and risk reduction. A maximum individual cancer risk exceeding 10 in one million, as demonstrated by an approved HRA, triggers the need for public notice. A maximum individual cancer risk of 25 in one million, as demonstrated by an approved HRA, triggers the need for the facility to reduce their facility-wide risk. Any facility whose facility-wide emission of TACs exceed the significant risk level of 100 in one million is required to achieve risk reductions to achieve a level below 100 in one million within three years from initial risk reduction plan submittal.

RULE 212

Rule 212 – Standards for Approving Permits and Issuing Public Notice was adopted in January 1976 and contains public notification requirements for new, modified, or relocated sources of air contaminants based on proximity to schools, increases to emissions above rule-specified daily maximums, and increases in toxic air contaminant emissions resulting in a MICR of greater than or equal to 10 in one million for single permitted source facilities, or 1 in one million for facilities with more than one permitted source, unless the applicant demonstrates to the satisfaction of the Executive Officer that the total facility-wide cancer risk is below 10 in one million.

CHAPTER 2: SUMMARY OF PROPOSED AMENDED RULES

OVERVIEW

The primary purpose of amending Rules 1401, 1401.1, 1402, and 212 is to update rule language relating to cancer risk calculation methodologies so that they are consistent with the Revised OEHHA Guidelines adopted on March 6, 2015.

Proposed Amendments to Rule 1401

Considerations for SCAQMD's permitting approach to implement the Revised OEHHA Guidelines included maintaining public health protection and avoiding backsliding of emission reductions that result in toxic exposure. SCAQMD staff considered if implementation of the guidelines would not unduly impede business activities, and identified approaches to streamline the process to minimize business impacts and SCAQMD resources consistent with principles of transparency and public participation. The proposed amendments to implement the Revised OEHHA Guidelines will be forward-looking. The SCAQMD staff will not retroactively review previously issued permits relative to the Revised OEHHA Guidelines, only permits that are new and modified that have been deemed complete after Rule 1401 has been adopted. Public notification pursuant to Rule 212 will not be applied retroactively but will apply to new and modified sources.

Proposed Amended Rule 1401 includes a provision to allow spray booths and retail gasoline transfer and dispensing facilities to continue to use the previous OEHHA risk guidelines which are used in SCAQMD Risk Assessment Procedures for Rules 1401 and 212 (Version 7.0, July 1, 2005) to calculate the cancer risk until the SCAQMD staff returns to the Board with specific proposals for these industries. The SCAQMD staff evaluated permits received between October 1, 2009 and October 1, 2014 and found that some spray booths may have difficulties meeting the Rule 1401 risk thresholds using the Revised OEHHA Guidelines. Over the five year permitting period, the SCAQMD received issued approximately 1,400 permits to operate or permits to construct for spray booths. Because of the large number of permits issued and consideration that this particular source category tends to be associated with smaller businesses such as wood coating operations and autobody facilities, SCAQMD staff is recommending that spray booths continue to use the previous health risk guidelines for permitting under Rules 1401. The SCAQMD staff will begin rulemaking to identify approaches by which industries using spray booths can reduce their toxic emissions and/or toxic exposure.

The SCAQMD staff is also recommending that retail gasoline transfer and dispensing facilities continue to use the previous OEHHA risk guidelines. Based on permitted data, there are approximately 3,300 retail gasoline stations in the district. The SCAQMD receives approximately 15 permit applications annually for new gas stations and 18 permit applications annually for modifications to increase throughput at a gasoline dispensing facilities. The SCAQMD staff just received new emissions data from CARB this month that could potentially change the emission estimates from gasoline dispensing facilities. Additional time is needed to better assess and understand the impacts from gasoline dispensing facilities before use of the Revised OEHHA Guidelines. All new gasoline stations are permitted with toxics best available controls and are required to comply with SCAQMD Rule 461 – Gasoline Transfer and Dispensing. PAR 1402 includes a commitment from the Executive Officer to return to the

Governing Board as quickly as practicable with Staff's analysis of emissions data from gasoline dispensing activities.

The definition for "MAXIMUM INDIVIDUAL CANCER RISK (MICR)" in existing Rule 1401 is defined as the estimated probability of a potentially maximally exposed individual contracting cancer as a result of exposure to toxic air contaminants over "a period of 70 years" for residential receptor locations. The assumption for lifetime exposure relating to a residential receptor in the Revised OEHHA Guidelines has been changed from 70 years to 30 years. In order for consistency with the Revised OEHHA Guidelines, paragraph (c)(8) has been amended to omit the assumption of "70 years" and add language that MICR at residential receptor locations be "calculated pursuant to the Risk Assessment Procedures referenced in subdivision (e)" which will be reflected in SCAQMD's Risk Assessment Procedures for Rules 1401, 1401.1, and 212, Version 8.0 and Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588).

Rule 1401 currently states that Executive Officer shall deny a permit to construct a new, relocated or modified permit unit if emissions of any listed toxic air contaminant occur, unless the applicant substantiates to the satisfaction of the Executive Officer that among other criterion, the "Risk Per Year" does not exceed "1/70 of the maximum allowable risk specified in the rule. The calculation for "Risk Per Year" is based on the 2003 OEHHA Guidelines relating to a residential exposure period of 70 years. For consistency with the 30 year exposure period of the Revised OEHHA Guidelines, paragraph (d)(4) has been amended to require that the risk per year shall not exceed the maximum allowable risk specified in the rule divided by the applicable exposure period referenced SCAQMD's Risk Assessment Procedures for Rules 1401, 1401.1, and 212, Version 8.0 and Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588) at any receptor locations in residential areas.

PAR 1401 also adds paragraph (g)(5) to allow the equipment category of "spray booths" and the industry category of "retail gasoline transfer and dispensing facilities" to continue using the SCAQMD Risk Assessment Procedures for Rules 1401 and 212 (Version 7.0, July 1, 2005) in order to calculate the cumulative increase in MICR pursuant to paragraph (d)(1).

Proposed Amendments to Rule 1401.1

The definition for "CANCER RISK" in paragraph (c)(1) is defined as the estimated probability of an exposed individual contracting cancer as a result of exposure to toxic air contaminants at a school or school under construction assuming "an exposure duration of 70 years". The assumption for lifetime exposure relating to a residential receptor in the Revised OEHHA Guidelines has been changed from 70 years to 30 years. In order for consistency with the Revised OEHHA Guidelines, paragraph (c)(1) has been amended to omit the assumption of "70 years".

Proposed Amendments to Rule 1402

The definition for "MAXIMUM INDIVIDUAL CANCER RISK (MICR)" in paragraph (c)(9) is defined as the estimated probability of a potentially maximally exposed individual contracting cancer as a result of exposure to toxic air contaminants over "a period of 70 years" for residential

receptor locations. The assumption for lifetime exposure relating to a residential receptor in the Revised OEHHA Guidelines has been changed from 70 years to 30 years. In order for consistency with the Revised OEHHA Guidelines, paragraph (c)(8) has been amended to omit the assumption of "70 years" and add language that MICR at residential receptor locations be "calculated pursuant to the Risk Assessment Procedures referenced in subdivision (j)" which will be reflected in SCAQMD's Risk Assessment Procedures for Rules 1401, 1401.1, and 212, Version 8.0 and Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588). Amendments have also been made to subparagraphs (j)(1)(C) and (j)(1)(D) to omit references to the "70 year exposure". Other amendments include revisions to Tables I and II to revise emission reporting thresholds for specific TACs and industries for consistency with calculations and methodologies of the Revised OEHHA Guidelines.

Proposed Amendments to Rule 212

Rule 212 requires public notification if any new or modified permit unit results in increases in emission of toxic air contaminants, for which the Executive Officer has made a determination that a person may be exposed to a MICR greater than or equal to 1 in a million for facilities with more than one permitted unit, or greater than or equal to 10 in a million for facilities with a single permitted unit "during a lifetime exposure period of 70 years". The assumption for lifetime exposure relating to a residential receptor in the Revised OEHHA Guidelines has been changed from 70 years to 30 years. In order for consistency with the Revised OEHHA Guidelines, clause (c)(3)(A)(i) and (c)(3)(A)(ii) has omitted the "during a lifetime (70 years)" language from the rule.

CHAPTER 3: IMPACT ASSESSMENT

AFFECTED INDUSTRIES

Implementation of Proposed Amended Rules 1401, 1401.1, 1402, and 212 affects many industry categories. As a result, it is challenging to predict the type, number, and size of new and modified sources that will be seeking permit applications. As previously discussed, implementation of the Revised OEHHA Guidelines is expected to increase the estimated inhalation health risk by about 3 times for residential receptors. SCAQMD staff conducted an analysis to better understand the potential number of sources that could be affected by the Revised OEHHA Guidelines for permitting new and modified sources (Rule 1401) and facilities under the AB2588 Hot Spots Program (Rule 1402). A discussion of the assumptions and basis for the number of facilities that could potentially require additional pollution controls is discussed below. A summary of the type of pollution controls is provided in Table 3-1 below. Table 3-1 identifies pollution control options, however to reduce toxic emissions an operator could choose other options such as less toxic coatings and solvents, process throughput limits, and distancing sources from receptors.

IMPACT ANALYSIS APPROACH

Rule 1401 and 1401.1 Analysis

To identify new and modified permitted equipment source categories that under Rule 1401 and 1401.1 could potentially need new or additional air pollution controls as a result of using the Revised OEHHA Guidelines, the SCAQMD staff evaluated permits that were issued over a five year period from October 2009 to October 2014. Based on this evaluation, the SCAQMD staff identified three general groups of equipment source categories based on the need for new or additional pollution controls using the Revised OEHHA Guidelines:

1) No new or additional air pollution controls needed:
2) New or additional pollution controls likely needed and/or additional time needed to understand potential impacts; and
3) Potential for new or additional air pollution controls could be required for some permits within an equipment source category.

Under the first group, no new or additional pollution controls are expected using the Revised OEHHA Guidelines because either the cancer risk was well below the Rule 1401 risk thresholds of 1 in one million without T-BACT, and 10 in one million with T-BACT, or there were no toxic emissions associated with the permitted source. Under the second group, SCAQMD staff found two equipment source categories (1) coating and solvents used in spray booths, and (2) retail gasoline dispensing facilities. For coating and solvents used in spray booths, for a percentage of permits reviewed it is likely that new or additional pollution controls would be needed to meet the Rule 1401 cancer risk threshold using the Revised OEHHA Guidelines. For retail gas stations, the SCAQMD staff has received new information from CARB staff regarding the latest speciation of emissions from gasoline dispensing. The SCAQMD staff needs additional time to assess the effects of this information and how it could affect new and modified gasoline dispensing facilities combined with the Revised OEHHA Guidelines. Therefore, Rule 1401 includes a provision to allow these two source categories to continue to use the existing OEHHA Guidelines. The SCAQMD staff will develop source-specific requirements for these source categories to reduce toxic emissions and to address potential permitting issues. For gasoline dispensing facilities, the SCAQMD staff will expedite review of emissions data for gasoline

dispensing to better understand potential impacts from gasoline dispensing facilities before using the Revised OEHHA Guidelines.

Lastly under the third group, based on review of five years of permitted data there were five equipment source categories that the estimated cancer risk with the Revised OEHHA Guidelines could require additional controls: metal plating facilities, crematories, plasma arc and laser cutting, wet gate printing and film cleaning, and asphalt and concrete batch blending. Table 3-1 provides a summary for the number of permits annually expected to need additional controls, affected toxic air contaminants, and the possible air pollution control technology for these each of the identified source categories. For plasma arc and laser cutting, most permits are currently close to 1 in one million so it is reasonable to expect for this source category nearly all permits for plasma arc and laser cutting will need additional air pollution controls in order to satisfy T-BACT requirements in Rule 1401, for sources exceeding 1 in a million cancer risk. The SCAQMD staff is working on a rule for metal grinding and cutting that will address emissions from plasma arc and laser cutting. Based on the permitted data, staff estimates that approximately 24 plasma arc and laser cutting permits annually could have estimated health risks greater than 1 in a million requiring pollution additional controls such as a bag house to capture metal particulates. For the remaining equipment or industry categories in Table 3-1, based on the five years of permitted data approximately one permit per year could potentially require additional air pollution controls.

Table 3-1
New or Modified Permits that Potentially Could Require Additional Pollution Controls Using the Revised OEHHA Guidelines[1]

Equipment Category	Number of Permits (Annually)	Toxic Air Contaminants	Typical Control Device
Metal Plating Facilities – Plating Tanks	1	Metal – nickel, hexavalent chromium, cadmium	HEPA filter for nickel plating tank
Crematory – Furnace	1	Combustion emissions – PAHs	Oxidation catalysts
Plasma Arc and Laser Cutting	24	Nickel and hexavalent chromium emissions	Baghouse for metal particulates
Wet Gate Printing and Film Cleaning (Perc)	1	Perchloroethylene emissions from film cleaning	Carbon adsorber
Asphalt Blending and Concrete Batch (Diesel ICEs)	1	Diesel particulate	Diesel particulate filter on diesel engine

[1] Based on SCAQMD analysis of permits issued between 2009 and 2014.

SCAQMD staff did not include equipment or industry categories that are exempt from Rule 1401 such as emergency internal combustion engines and wood product stripping. SCAQMD staff also did not analyze impacts for permits related to change of ownerships, alterations, or modifications that did not result in an increase in toxic emissions. District Rule 1421 – Control

of Perchloroethylene Emissions from Dry Cleaning Systems contain requirements for the phase out of perchloroethylene dry cleaning equipment by 2020 and the state ATCM does not allow purchase of new perchloroethylene dry cleaning equipment. SCAQMD staff did not include the permitting of this equipment category into the impact analysis for this rule development since permitting data shows no permits issued for new perchloroethylene dry cleaning machines over the past five years.

AB2588 Air Toxics Hot Spots Program (Core Facilities) – Rule 1402 Analysis

Since Rule 1402 adoption in 1994, the SCAQMD staff has approved approximately 300 facility HRAs. Based on the most recent approved HRAs for each facility, the SCAQMD staff estimates that 21 facilities could potentially have a cancer risk greater than or equal to 25 in a million when using the Revised OEHHA Guidelines. Under Rule 1402, if the facility-wide health risk is greater than or equal to the action risk level the operator is required to implement risk reduction measures specified in a risk reduction plan to reduce the impact of total facility emissions below the action risk level as quickly as feasible, but by no later than three years. Regarding facilities that are in the AB2588 program, but have not been required to submit an HRA, the SCAQMD staff found that although more facilities will likely be required to submit an HRA, it is not expected that their cancer risk will be over the action risk threshold of 25 in one million. Therefore, no additional pollution controls are assumed for those facilities.

SCAQMD staff evaluated the main toxic driver(s) for the 21 AB2588 facilities that could potentially be required to implement risk reduction measures to make an estimate of the types of additional pollution controls that could potentially be implemented. Rule 1402 establishes a "facility-wide" risk threshold, so there are a variety of options which can be implemented such as process changes, material changes, additional air pollution controls, and reduced throughput. Table 3-2 summarizes the type of facility, key toxic air contaminant that is contributing to the cancer risk, and the type of air pollution controls that could be implemented to reduce the cancer risk.

Table 3-2
Potential Air Pollution Control Device(s)
For Use to Reduce Cancer Risk by AB2588 Facilities

Facility Type	Key Toxic Driver	Air Pollution Control Device(s)
Aerospace	hexavalent chromium, perchloroethylene, tetrachloroethylene	Scrubber/Carbon Adsorber
Aerospace	hexavalent chromium, cadmium	HEPA/Scrubber
Aerospace	perchloroethylene, tetracholorethylene, hexavalent chromium	Carbon Adsorber/HEPA/Scrubber
Aerospace	hexavalent chromium	HEPA/Scrubber
Aerospace	hexavalent chromium	HEPA/Scrubber
Aerospace	lead	HEPA/Scrubber
Asphalt Manufacturer	PAHs, formaldehyde	Scrubber/Carbon Adsorber
Hospital	formaldehyde, PAHs	Thermal oxidizer/Oxidation catalysts
Metal Forging and Heat Treating	nickel	HEPA/Scrubber
Metal Melting	cadmium, lead	HEPA/Scrubber
Metal Melting	cadmium, lead	HEPA/Scrubber
Metal Melting	arsenic, cadmium	Scrubber
Metal Plating and Finishing	hexavalent chromium, nickel, cadmium	HEPA/Scrubber
Metal Plating and Finishing	hexavalent chromium	HEPA/Scrubber
Metal Plating and Finishing	hexavalent chromium	HEPA/Scrubber
Petroleum Refining	1,3-butadiene, hexavalent chromium	Thermal oxidizer/HEPA
Petroleum Refining	diesel particulate matter, 1,3-butadiene (engines)	Diesel particulate filters/Thermal Oxidizer
Petroleum Refining	benzene, PAHs	Thermal oxidizer/Oxidation catalyst
Petroleum Refining	diesel particulate matter (engines), arsenic	Diesel particulate filters/Scrubber
Waste Management	dioxins, furans	Thermal oxidizer
Waste Management	formaldehyde	Carbon Adsorber
Waste Management	formaldehyde	Carbon Adsorber

It is assumed that 22 facilities could potentially need to install additional air pollution controls due to the Revised OEHHA Guidelines. This is likely a conservative estimate (meaning there are not likely to be more such facilities) where staff estimated based on previously approved HRAs. It is possible that some facilities could have implemented emission reduction projects that have reduced air toxic emissions and health risks since the HRA was approved.

AB2588 is the state-required Air Toxics Hot Spots Program required by Health and Safety Code §44360(b)(2) which is implemented here in the SCAQMD through Rule 1402. Under the AB2588 program, facilities are divided into four implementation groups. During the "quadrennial" review, AB2588 facilities are required to submit a more detailed emissions inventory for 177 toxic air contaminants. (During the three years between the quadrennial review

AB2588 facilities submit a toxics inventory for 23 toxic air contaminants.) Based on the quadrennial toxics emissions inventory, SCAQMD staff prioritizes facilities and sends a letter to those facilities with a high Priority Score to submit an even more detailed emissions inventory and HRA. Implementing the AB2588 program using the quadrennial review approach provides a more even workflow and reduces the impact on affected facilities to provide a detailed inventory. Implementation of the Revised OEHHA Guidelines will follow the existing quadrennial review process.

The type of control device(s) necessary for implementing risk reduction measures will vary by the pollutant(s) creating the risk. A summary of the type of pollution controls to address the particular TAC is identified in Table 3-2. Possible control options depending on the TAC could be carbon adsorbers, thermal oxidizers, baghouses with high efficiency particulate arrestors (HEPA), diesel particulate filters, and scrubbers. A facility could potentially use one or all of the possible pollution controls depending on the amount of risk reduction needed.

Rule 212 Analysis

Currently, the SCAQMD staff issues approximately five Rule 212 notices annually, on average, for increases in toxic emissions. Rule 212 notices are issued for increases in criteria pollutant emissions and for projects that are within 1,000 feet of a school. Under Rule 212, a toxics notices is issued if the cancer risk is greater than 1 in a million for facilities with more than one permitted piece of equipment unless the facility-wide cancer risk is less than 10 in a million. A Rule 212 notices is also required if the permitted source is 10 in a million.

SOCIOECONOMIC ASSESSMENT

A socioeconomic assessment for PAR 1401, 1401.1, 1402, and 212 will be conducted and will be available to the public at least 30 days prior to the SCAQMD Governing Board Meeting anticipated for May 1, 2015.

CALIFORNIA ENVIRONMENTAL QUALITY ACT ANALYSIS

Pursuant to the California Environmental Quality Act (CEQA) and SCAQMD Rule 110, SCAQMD staff has evaluated the proposed project and is preparing the appropriate CEQA determination. The public workshop meetings will also serve to solicit public input on any potential environmental impacts from the proposed project. Comments received at the public workshops on any environmental impacts will be considered when developing the final CEQA document for this rulemaking.

DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727

Requirements to Make Findings

California Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the SCAQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report.

Necessity
PAR 1401, 1401.1, 1402, and 212 are needed to update rule language relating to risk assessment calculations such that they are consistent to those specified in the state OEHHA Risk Assessment Guidelines adopted on March 6, 2015.

Authority
The AQMD Governing Board has authority to adopt amendments to Rules 1401, 1401.1, 1402, and 212 pursuant to the California Health and Safety Code Sections 39002, 39650 et. seq., 40000, 40001, 40440, 40441, 40702, 40725 through 40728, 41508, 41700, 41706 and 44390 through 44394.

Clarity
PAR 1401, 1401.1, 1402, and 212 are written or displayed so that its meaning can be easily understood by the persons directly affected by them.

Consistency
PAR 1401, 1401.1, 1402, and 212 are in harmony with and not in conflict with or contradictory to, existing statutes, court decisions or state or federal regulations.

Non-Duplication
PAR 1401, 1401.1, 1402, and 212 will not impose the same requirements as any existing state or federal regulations. The proposed amended rules are necessary and proper to execute the powers and duties granted to, and imposed upon, the SCAQMD.

Reference
By adopting PAR 1401, 1401.1, 1402, and 212, the SCAQMD Governing Board will be implementing, interpreting or making specific the provisions of the California Health and Safety Code Sections 39666 (District new source review rules for toxics), 41700 (prohibited discharges), and 44390 et seq. (Risk Reduction Audits and Plans).

Rule Adoption Relative to Cost-effectiveness
On October 14, 1994, the Governing Board adopted a resolution that requires staff to address whether rules being proposed for adoption are considered in the order of cost-effectiveness. The 2012 Air Quality Management Plan (AQMP) ranked, in the order of cost-effectiveness, all of the control measures for which costs were quantified. It is generally recommended that the most cost-effective actions be taken first. PAR 1401, 1401.1, 1402, and 212 are not control measures in the 2012 Air Quality Management Plan (AQMP) and, thus, was not ranked by cost-effectiveness relative to other AQMP control measures in the 2012 AQMP. In addition, cost-effectiveness defined as cost per ton of emission reductions is meaningful for toxic risk since risk depends on several factors in addition to emission numbers such as geography, meteorology, and location of receptors.

Incremental Cost-effectiveness
Health and Safety Code Section 40920.6 requires an incremental cost effectiveness analysis for Best Available Retrofit Control Technology (BARCT) rules or emission reduction strategies when there is more than one control option which would achieve the emission reduction objective of the proposed amendments, relative to ozone, CO, SOx, NOx, and their precursors.

Since the proposed amended rule applies to toxic air contaminants, the incremental cost effectiveness analysis requirement does not apply.

COMPARATIVE ANALYSIS

Health and Safety Code section 40727.2 requires a comparative analysis of the proposed amended rule with any Federal or District rules and regulations applicable to the same source. See Table 3-3 below.

Table 3-3
Comparative Analysis of PAR 212, 1401, 1401.1 and 1402 with Federal Regulations

Rule Element	PAR 212	PAR 1401	PAR 1401.1	PAR 1402	Equivalent Federal Regulation
Applicability	New or modified permit unit	New, relocated or modified permit unit	New or relocated permit unit	Existing facilities subject to Air Toxics "Hot Spots" Information and Assessment Act of 1987 and facilities with total facility emissions exceeding any significant or action risk level	None
Requirements	Provide public notice to all nearby addresses projects that are located within 1,000 feet of a school, increase risk or nuisance, or increase criteria pollutants above specified thresholds	Limits maximum individual cancer risk, cancer burden and chronic and acute hazards	Limits cancer risk and chronic and acute hazards near schools	Submittal of health risk assessment for total facility emissions when notified. Implement risk reduction measures if facility-wide risk is greater than or equal to action risk level	None

Rule Element	PAR 212	PAR 1401	PAR 1401.1	PAR 1402	Equivalent Federal Regulation
Reporting	Verification that public notice has been distributed	None	None	Progress reports and updates to risk reduction plans	None
Monitoring	None	None	None	None	None
Recordkeeping	None	None	None	None	None

REFERENCES

REFERENCES

"2010 Clean Communities Plan," South Coast Air Quality Management District, November 2010.

"Air Toxics Hot Spots Program, Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments," Office of Environmental Health Hazard Assessment, February 2015.

"Final Staff Report for Proposed Rule 1402: Control of Toxic Air Contaminants From Existing Sources and Proposed Amended Rule 1401: New Source Review of Toxic Air Contaminants," South Coast Air Quality Management District, February 4, 1994.

"Risk Assessment Procedures for Rules 1401 and 212, Version 7.0," South Coast Air Quality Management District, July 1, 2005

"Staff Report for Proposed Amended Rule 1401 – New Source Review of Toxic Air Contaminants and 1402 – Control of Toxic Air Contaminants from Existing Sources," South Coast Air Quality Management District, March 2005.

"Staff Report for Proposed Amended Rule 1401.1 – Requirements for New and Relocated Facilities Near Schools," South Coast Air Quality Management District, October 2005.

"The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments," Office of Environmental Health Hazard Assessment (OEHHA), March 2015.